2 pts additionally a satisfying preceding of the QRS onset by local ventricular activation was achieved. RFC ablation was not performed due to lacking clinically established systems for application in the epicardial aspect.

Conclusion: Out of 42 pts with the initial diagnosis of a RVOT arryhthmia, only in 22 an arrhythmogenic substrate was localized and eventually ablated. Epicardial mapping via the coronary veinous system could help to identify substrate localization in pts with failing attempt from the endocardial site. In view of expected features for RFC application in that space, such procedure is advisable.

1100 Echocardiography In Ischemic Heart Disease

Tuesday, March 31, 1998, 9:00 a.m.–11:00 a.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 9:00 a.m.–10:00 a.m.

1100-113 Serial Echocardiography in Patients With Acute Myocardial Infarction Undergoing Primary PTCA

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The natural history of regional LV function following primary angioplasty (PA) has not been well studied. Therefore, 33 pts (58 ± 14 years, 19 males) undergoing PA were studied with echocardiography early (< 12 hrs post PA) and at a follow-up of 48 ± 80 days.

Methods: Two readers blinded to study sequence assessed early and late LV systolic function using a 16-segment model on a 1-4 scoring scale (1 = normal, 2 = hypokinesis, 3 = akinesis, 4 = dyskinesis). Pts with improved function in the infarct-related artery territory (defined as decrease in score ≥1 if baseline = 4 or ≥1 for other baseline values) were compared with those with fixed dysfunction in terms of 28 clinical variables. Wall motion score index (WMSI = total score ÷ 16) and quantitatively derived LVEF at baseline and follow-up were also compared.

Results: Of 33 pts, 16 had improved function in the infarct related artery territory. Of the clinical variables considered only poor angiographic outcome (defined as residual stenosis >50%, abrupt closure; distal embolization, snowplow effect or TIMI flow ≤2) predicted failure to improve. (p = 0.005). Overall, WMSI improved from 1.86 ± 0.45 at baseline to 1.71 ± 0.52 at follow-up p = 0.002. Baseline LVEF was 36 ± 11 vs 40 ± 15 at follow-up (p = 0.77).

Conclusions: PA results in variable delayed improvement in LV regional function. Improvement is inversely related to a poor angiographic outcome but not to other clinical variables.

1100-115 A Canine Model of Chronic Ischemic Cardiomyopathy: Characterization of Regional Flow-Function Relations

S. Firoozan, K. Wei, A. Linka, D. Skyba, N.C. Goodman, S. Kaul. *University of Virginia, Charlottesville, Virginia, USA*

Background: The controversy regarding the mechanism(s) of regional and global LV dysfunction in chronic CAD is, in part, related to the lack of an animal model of this condition. We describe a novel canine model that mimics the human condition.

Methods: Ameroid constrictors were placed on proximal portions of coronary arteries in dogs, who were then euthanised after the development (mean = 6 weeks) of severe global LV dysfunction. Myocardial blood flow (MBF) was measured with radiolabeled microspheres and regional and global LV systolic function was quantified with 2D echo. No evidence of infarction was found in the majority of the 12 dogs in whom complete data were available. LV end-systolic size doubled (p < 0.001) over the observation period. Percent change in LV size from end-diastole to end-systole decreased by >50% (p < 0.001). Regional dysfunction was noted in 23 of 24 myocardial beds analyzed. In 10 beds severe dysfunction was noted without a decrease in resting MBF. In 13 beds, decrease in function was associated with a decrease in MBF (p < 0.001), and close coupling between the two was noted. In all segements with reduced MBF, decrease in function preceded the decrease in MBF.

Conclusions: We have developed a canine model of chronic ischemic LV dysfunction that closely mimics the human condition. While regional function is severely reduced in this model, the pathophysiologic basis varies between different segments and with time. These results have major clinical implications.

1100-116 Transthoracic Echocardiographic Demonstration of Coronary Blood Flow After Revascularization Procedures

K. Vlachonassios, H. Vaghefi, I. Wong, I. Nuno, P. Anthony, N. Chandrarntna. *LAC & USC Medical Center, Los Angeles, CA, USA*

To determine whether coronary sinus blood flow (CSBF) will increase after revascularization procedure (Rev), transthoracic echocardiography (TTE) was performed in 15 consecutive pts with coronary artery disease. A right ventricular two chamber TTE and color flow imaging were done to visualize the coronary sinus (CS) and the flow within it. CSBF velocity was identified by pulsed Doppler recordings as a systolic and diastolic signal with very little respiratory variation (in contrast to inferior vena cava flow). The time velocity integral of the CS (TVI-CS) was measured. The CS was then imaged in the apical 4-chamber view, an M-mode TTE of the CS was recorded, and the diameter in 5 equally spaced segments in the cardiac cycle was averaged. Assuming that the CS is an ellipse, the major diameter (D) is imaged, and the minor diameter equals D/2, the cross sectional area of the CS (CS-CSA) was calculated. CSBF was calculated as: TVI-CS x CS-CSA x Heart rate. CSBF (ml/min) was obtained before and after revascularization (CABG in 13 pts, angioplasty in 2 pts), and expressed as mean ± SD.

Results:

	Before Rev	After Rev	% Change	P Value
CSBF	267 ± 95.7	437 ± 113.8	67 ± 19	< 0.001

Conclusion: CSBF increased markedly after revascularization. Further investigation is warranted to assess the utility of this technique in evaluating graft closure or restenosis.

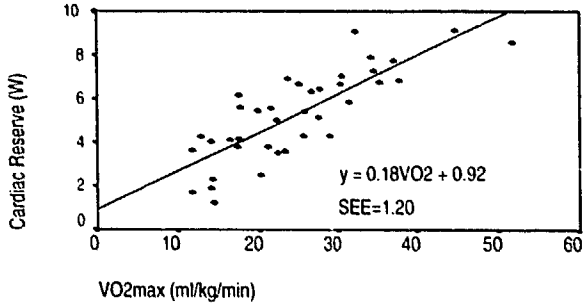
1100-117 Cardiac Power Reserve: A Novel Simple Index Correlates With VO_2

G. Armstrong, S. Carlier, R. Borden, T. Marwick. *Cleveland Clinic Foundation, Cleveland, Ohio, USA*

Maximal oxygen uptake (VO_2) is the best test of cardiac work but is costly and technically demanding. Power (the instantaneous product of aortic flow and LV pressure) is work per unit time; we sought whether a simplified index of peak power (PP) was an alternative to VO_2.

Methods: PP can be estimated using Doppler echo and a reconstructed central aortic pressure waveform. This waveform is hard to reconstruct during exercise so we estimated PP as the product of mean brachial cuff pressure and peak aortic CW Doppler flow. We compared contractile reserve (CR, rest-stress PP) and VO_2 in 13 volunteers and 25 pts undergoing exercise echo and metabolic testing for evaluation of coronary or valvular heart disease.

Results: CR correlated with VO_2 (r = 0.81, p < 0.0001) better (p < 0.01) than rate-pressure product (r = 0.42, p = 0.009) and change in ejection fraction (r = 0.18, p = 0.32). The correlation of CR with VO_2 was not significantly different (p > 0.05) among subgroups: positive stress echo (scar or ischemia, 7 pts); submaximal stress (<85% MPHR ± rer <1.1, 13 pts); mitral regurgitation ± atrial fibrillation (7 pts); LV dysfunction (EF <45%, 3 pts).



Conclusions: Cardiac power reserve estimated from simple non-invasive measurements correlates with VO_2.

1100-119 Evaluation of Diastolic Function in Dilated Cardiomyopathy: Effects of Mitral Regurgitation on Color Kinesis and Doppler

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Background: Patients with dilated cardiomyopathy (DCM) have abnormal LV diastolic properties. However, mitral regurgitation (MR), commonly encountered in these patients, affects the indirect Doppler assessment of LV filling

TUESDAY POSTER